THE MARINE RECORD.

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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and im rove the character of the service rendered to the public.

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THE TWENTY-ONE FOOT CHANNEL.

The work of excavating a channel of twenty feet in depth through the waters of the Great Lakes between Chicago, Duluth and Buffalo. which was commenced in 1893, is now more than two-thirds completed. The work is divided into eight sections. The first four sections include the excavation needed in the Sault Ste. Marie River, through which there will be a channel 21 feet in depth and 300 feet in width. On this part of the work progress is noted as follows:

Section 1—At Round Island shoals, included the work of removing 90,000 cubic yards of boulders, clay, sand, gravel, and hard pan at 44 cents per yard. This has been completed.

Section 2—At Little Mud Lake, between the lower end of Sugar Island and the "Dark Hole," is in progress and consists of 380,000 cubic yards of the same material as No. 1, at the contract price of 25.9 cents per yard.

Section 3—Is now being cut through the reef, mainly of limestone rock, abreast of Sailors' Encampment Island. The amount to be removed is about 90,366 cubic yards, for which the contract price is $2.43 per yard.

Section 4—Consists of about 173,218 cubic yards of mud, clay, gravel and sand. The excavation goes through a shoal in Mud Lake, and 1½ miles below Sailors' Encampment Island, and the contract price is 22 cents per yard. This section has been completed.

The remaining four sections will complete the channel from the foot of Lake Huron to deep water at the head of Lake Erie. The extent of the work on each section and the progress that has thus far been made are outlined below:

Section 5—At the foot of Lake Huron, was commenced in June 14, 1893. The amount of excavations is about 400,000 cubic yards, at 58 cents per yard, and the work is well advanced. The channel here will be 21 feet deep and 2,400 feet wide. The large width will afford a spacious area of approach, which is greatly needed at this point for sailing vessels.

Section 6—Consists in deepening the channel to a depth of 20 feet from deep water in the St. Clair River, through the St. Clair Flats Canal—its entire length, and from thence to deep water in Lake St. Clair. The width of the channel above the canal is about 650 feet, and below the canal it gradually widens out to 800 feet. This section, which involved the removal of about 648,630 cubic yards of clay and sand at 16½ cents per yard, has been completed.

Section 7—Consists of a channel 800 feet wide through the Grosse Pointe Flats, on Lake St. Clair, and involves the excavation of about 2,900,000 cubic yards of clay, gravel, sand and some boulders, for which the contract price is 14⅞ cents per yard. The work was commenced by the contractors, Breyman Bros., in April, 1893. Last year 318,990 yards were excavated, and 1,370,450 yards during the present year. The work was suspended for the season on the 22d ult. This part of the channel will be 20 feet deep and 800 feet wide. The assistant engineer of this section is Colonel H. Kallman, of Detroit.

Section 8—Is a channel 21 feet deep and 800 feet wide through the bar at the mouth of the Detroit River. The material consists of about 1,086,000 cubic yards of sand, clay, gravel and boulders, for which the contract price is 18 cents per yard. Up to date about 496,080 yards have been excavated. The rate of progress on this section is not as great as that required by the specifications, and it is expected that the number of dredges will be increased next season. One of the causes of the delay has been the prevalence of bad weather during the past season.

To recapitulate, three of the sections have been completed, and it is probable that four will be completed at the contract time next fall. But it is possible that the section comprising the bar at the mouth of the Detroit River will not be finished until 1896.

NOTICE TO MARINERS.

KEWAUNEE PIERHEAD LIGHT-STATION. — Notice is hereby given that, on and after January 31, 1895, during thick or foggy weather, a ten-inch steam whistle, recently erected at this station, entrance to Kewaunee harbor, Lake Michigan, will sound blasts of 3 seconds' duration, separated by silent intervals of 17 seconds, thus:

Blast	Silent interval	Blast	Silent interval
3 sec.	17 sec.	3 sec.	17 sec.

The fog-signal building is a brown corrugated iron structure, with gable roof, and stands near the outer end of the N. pier, immediately in rear of the light tower.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—MICHIGAN.

LUDINGTON PIERHEAD RANGE LIGHT-STATION.—Notice is hereby given that, on and after January 31, 1895, during thick or foggy weather, a 10-inch steam whistle recently erected at this station, entrance to Ludington harbor, Lake Michigan, will sound blasts of 3 seconds duration, separated by silent intervals of 17 seconds, thus:

Blast	Silent interval	Blast	Silent interval
3 sec.	17 sec.	3 sec.	17 sec.

The fog-signal building is a brown corrugated iron structure with gable roof, and stands near the outer end of the S. pier, immediately in rear of the light tower.

By order of the Light-House Board.

JOHN G. WALKER,
Rear-Admiral U. S. Navy, Chairman.

Office of the Light-House Board, Washington, D. C., January 17, 1895.

IMPROVEMENTS TO COLLINGWOOD HARBOR LIGHT.—The light at the turn of the dredged channel in Collingwood harbor, Georgian Bay, in the North Riding of Simcoe, Ontario, has been improved by removing the mast with white shed at its base from the crib on which it stood and replacing it by an enclosed light-house tower. Lat. N. 44° 30′ 40″. Long. W. 80° 13′ 45″. The tower is a square, pyramidal, wooden building, painted white, surmounted by a square wooden lantern, painted red. The height of the building from the pier to the vane on the lantern is 27 feet. The light, which was first shown from this tower on the 10th of August last, is a fixed red light, which should be visible from all points of approach in the channel, six miles. It is elevated 27 feet above the level of the bay.

Vessels making the harbor from the westward keep about half a mile off shore until this light opens a little to the eastward of the light on the extremity of the west breakwater, when they haul for the former, leaving the breakwater light 250 feet distant on the starboard hand in passing. They also leave the harbor light on the starboard hand in entering.

WM. SMITH,
Deputy Minister of Marine and Fisheries.

DEPARTMENT OF MARINE AND FISHERIES, .
OTTAWA, CANADA, 10th January, 1895.

INFORMATION WANTED.

A correspondent at E. Tawas, Mich. writes THE MARINE RECORD as follows: "The body of Mr. Hannah, late second mate of the steamer Philadelphia which collided with the Albany and foundered in Thunder Bay about sixteen months ago has not been claimed. He had $80 in his memorandum book and wore a pin lettered L. P. A. A. No. 1, also a masonic badge (square and compass). The money was deposited with the county clerk and if his relatives or friends could see this letter they might recover the money and effects. On the body of Charles Williams but $1 and some small change was found. C. M. Leggett, chief engineer had a silver watch, $21 in bills and $2 in silver. Wm. Reidmeister had $50 in bills and $2 silver. Geo. Wise $20 in bills and $4.73 in coin. John Hurst $25 in bills and $1 in silver. What society does L. P. A. A. signify and where is lodge No. 1 located?

The foregoing initials probably represents the Lake Pilots Aid Association with No. 1 branch in Buffalo.

NEWS AROUND THE LAKES.

CHICAGO, ILL.

Special Correspondence to The Marine Record.

John C. Fitzpatrick, vessel agent, Buffalo. paid a visit to this city last week.

Fred Ballin, manager of the Detroit Boat Works was in this city on business last week.

At the Chicago Shipbuilding Co.'s shipyard the steamers Kearsarge and Pathfinder were in dock for repairs.

The whaleback barge, No 117 is at the O. S. Richardson Fueling Co.'s North Market street coal dock unloading 2,800 tons of Black Horse Coal.

At Miller Bros. shipyard the steam yacht Osceola is in dock for repairs, scraping and painting, the fire boat Geyser for some new bottom planting and recalking and repairs to machinery.

The charter by Carr & Blair of the steamer Uganda for 95,000 bushels of corn to Buffalo was the only charter made since my last letter. The fall of one quarter of a cent in freights a week ago has caused many vessel-owners to withdraw their vessels for the time being.

The Dunham Towing and Wrecking Co.'s Tug T. T. Morford left here last Thursday to go to the steamer Petoskey which was stuck in the ice off St. Joseph. The Morford succeeded in getting to the Petoskey and released her and returned to this port on Sunday night. She encounted large quantities of ice and had a rough experience.

Fred Chittenden, vessel broker and agent, 53 River street, Chicago, formerly of the firm of Chittenden & Richardson, Capt. C. Richardson having retired when he was appointed Inspector of Hulls for this port, associated himself with Captain F. H. Marsh and F. Goodhull as his partners, on the 1st of January. The firm will in future be known as "Chittenden & Co." They will represent the well known Detroit Boat Works at this port, and will carry on a general vessel agency and broker's business,

Captain John W. Gillman, superintendent of the Goodrich Transportation Co. returned from Manitowec, Saturdav night. The company's steamer, Chicago went out of Burger & Burger's dry dock Friday after receiving a thorough rebuild. The company's steamer City of Racine is being fitted out and will arrive here from Manitowoc about Feb'y 1st, and will form a daily line between Chicago and Milwaukee in connection with their steamers, City of Ludington and Menominee, which will extend their trips as far north as the Sturgeon Bay Canal.

John Bond, aged 18 years, was accidentally killed Wednesday evening, January 16th by falling into the hold of the steamer Centurion. The steamer was laying at the Lehigh Valley Co.'s coal dock just where she had been unloading her cargo of coal during the day, after the unloaders quit work, the deceased with his brother who was assisting him as shipkeeper, commenced putting on the hatches and as they were putting on the one at the hatch forward of the deckhouse, he slipped and fell headlong into the hold. He was unconscious when picked up and died in about 15 minutes without regaining consciousness. His home was in St. Clair, Mich.

CLEVELAND, O.

Special Correspondence to The Marine Record.

Repairs on the steamer Cambria were completed at the Cleveland Dry Dock this week.

The schooner Fontana has been followed in the Ship Owners' dry dock this week by the steamer Kaliyuga.

The steamer J. H. Devereux followed the Cambria in dry dock to examine her stem bearings and to have a new fender angle piece and about eighty feet of timber set in same.

C. W. Elphicke, of Chicago, Capt. James Davidson and F. W. Wheeler, of Bay City, Sinclair Stuart, of New York and J. W. Squires, of Marine City were among the visitors at this port during the week.

Capt. Angus McDougall visited this port during the week and left for Buffalo. The captain having resigned from the service of the American Steel Barge Co., will enter into the vessel brokerage business next season at Duluth.

The lake pilots met at the rooms of the M. E. B. A., 96 Superior street, on Saturday last, to hold a preliminary meeting relative to forming an organization for mutual benefit. Another meeting will be held on Saturday, January 26, when further steps will be taken and a Harbor may be inaugurated.

The business of the line has so increased that Mr. Rogers, who has been general freight and passenger agent of the Cleveland & Buffalo Transit Co., will divide his duties next season with Mr. W. F. Hermann, who will take over the duties of general passenger agent, leaving Mr. H. R. Rogers to devote his entire attention to the freight department.

Specifications and plans for opening the west arm of the breakwater are being prepared at Col. Smith's office and bids for the work will be asked for in a short time. If fair bids are received the work will be done by contract, otherwise the government will do it. The work will not be started until it is certain that it will not be interfered with by the ice.

It is almost time for this port to waken up and give such facilities to shipping as will hold the trade which it has acquired. Ashtabula harbor walked ahead of Cleveland in iron ore receipts last season to the tune of 422,663 tons of iron ore, a large proportion of which no doubt would have come to this port had there been adequate facilities offered for handling it.

The River Machine and Boiler Works, Messrs. Teare & Thomas, are having a fairly busy time on new orders and marine repair work. Orders for the compact and powerful deck hoisting engine of which the firm make a specialty, have been more numerous this year than ever before, and it has been found necessary to keep a number of the engines on hand ready for shipment.

Ensign Cole, U. S. N. in charge of the branch hydrographic office at this port attended the meeting of the several committees of the Lake Carriers' Association and the Shipmaster's Association held at this port on Saturday afternoon when the question of passing signals in fog was fully discussed. If I understand aright the Ensign is in full accord with the shipmasters on this question of allowing passing signals in lake navigation.

The steel steamer Cambria will receive a steel spar deck this winter, clean fore and aft, the wooden deck being taken up, a short length of steel main deck aft of the engine room will also be given her. The Corona is to be steel decked forward from the collision bulkhead to the fore hatch, say about sixteen feet. The Corsica is to be steel decked aft on the main deck same as the Cambria.

On the motion to appropriate $25,000 towards improving the Cuyahoga River, there was some opposition evinced in the city council this week, but Councilman G. C. Barnes, president of the Chase Machine Co , pertinently stated that instead of the foregoing paltry amount the city would make a safe investment by devoting no less a sum than $500,000 for river and harbor improvements, and he was right, too.

In addition to the several contracts for engines and boilers closed within the past few days by the Cleveland Ship Building Co. an order has been placed by F. W. Wheeler & Co. for a Scotch type boiler 10½ by 12 feet in length. Work on the steel steamship for M. M. Drake and others of Buffalo is progressing rapidly considering the inclement weather and the ways are being cleared to lay the keel of the contract placed by the Interlake Co.

No change was made in the board of directors or officers of the Republic Iron Co. at their annual meeting last week. W. D. Rees was re-elected president and treasurer, H. B. Perkins, vice-president; W. B. Castle, secretary, and Douglas Perkins, auditor. The directors are H. B. Perknis. G. W. Matteson, Samuel Mather, W. D. Rees, J. V. Painter, Peter White, W. F. Dummer, A. Hart and N. M. Kaufman. A dividend of 50 cents a share, payable January 16, was declared.

Although there is nothing on the ways at the shipyard of the Globe Iron Works Co., some close figuring is being done on large new tonnage and one if not two keels are likely to be laid at an early date. Work of completion on the large steamer North Land is being carried on briskly at the shipyard and a great deal of repair work to iron and steel steamers keeps a small army of skilled workmen fully employed. At the engine and boilers shops of the Works all labor that can be used to advantage is engaged in working on recent new contracts of which a duplicate engine of the one placed in the passenger steamer Virginia for a local electric plant and an order for eight Scotch-type boilers for the car ferries building at Toledo are among the latest.

The joint meeting on Saturday of three committees of the Lake Carriers' Association with the Shipmasters' Association was very enthusiastic and interesting and promises good results according to the present outlook. The sessions were held at the shipmasters' lodge rooms on Water street. President William Livingstone, of Detroit, the Lake Carriers' new presiding officer, was the only out of town member present, but Secretary Charles H. Keep, of Buffalo, was instructed by the Buffalo members of the committees on finance, legislation and aids to navigation to present their views on the subject to be discussed and also furnished him with letters expressing their sentiments. These expressions represented the only lack of unanimity in the work of the joint session and hinged upon whether passing signals ought or ought not to be used in a fog. The result of the meeting was that the Lake Carriers' Association voted $500 to defray the expenses of a delegation of shipmasters who left for Washington on Monday to lay their revision of the pilot rules before the several congressional committees in charge of this work.

Col. Jared A. Smith, United States engineer, is making good progress with work in this district under the latest appropriations. He has just completed the two lights at the mouth of the Maumee River, which will be known as the Manhattan Range. This range will take the place of three other groups of two lights each, which marked the old channel, and which were known respectively as the Ironville or Inner Maumee, the Middle Maumee, and the Outer Maumee ranges, and they will be discontinued. Alterations has begun on what is known as the "turnout" range in the new straight channel through the bay, and when completed one of the three lights now in use there will be discontinued. A new range is also being erected at the entrance to Sandusky Bay, which will also have the effect of discontinuing two others. The United States attorney is now examining the title to property on the southwest point of South Bass, or Put-in-Bay Island, and if the title is clear, that land will be purchased and a brick light-house and keepers dwelling erected thereon, to guide navigators about the dangerous reefs in that vicinity.

BUFFALO, N. Y.

Special Correspondence to The Marine Record.

The move of the Lake Carriers' Association to cut off the fueling abuse at Buffalo is pretty sure to result in the pooling of the fueling companies entire. A vessel broker estimates that not less than $100,000 was collected for vessel fuel above the regular price here last season. He is not prepared to say who got the benefit of it. The practice shows the way such abuses will grow, especially when the responsibility for them is divided up among several people.

The package freight and general cargo liners out of this port are determined to cut down office and shore expenses to the lowest notch for next season's work. The complaint of no earnings has become chronic and while it is not denied that some of the boats make money, it is swallowed up year after year in the agents, offices and clerks expenses. It is reported, however, that the Anchor Line are censidering the addition of new tonnage so as to save the expense of chartering outside boats.

There is a quantity of Manitoba wheat now in elevators here, owned by Canadians who desire to have it shipped back to Canada free of duty, and to this end they have appealed to their government. It is ruled, however, that as most of the grain in question was shipped from Port Arthur or Fort William to Buffalo in American bottoms, to permit it to be re-imported into Canada would be equivalent to a recognition of the right of a United States vessel to carry Canadian produce from one Canadian port to another, thus breakiug down their coastal laws and restrictions and consequently the grain can not be re-imported free of duty.

It was reported that on his return from New York this week John Gordon, general manager of the Northern Steamship Co., would be ready to give out the name of the successor to Mr. T. P. Carpenter as general passenger agent of the line. Mr. Gordon, however, says that President Hill has left for Europe and the naming of the man was expected to be decided before he left. "There is nothing to say yet," said he, "as Mr. Carpenter will not leave us until the first of the month. A circular will be issued in a few days and as soon as that is ready the name will be given out."

It was found that the steamer John Mitchell's cargo

of corn, which was to be held on board the vessel during the winter, has been damaged while lying at the Lackawanna coal trestle since her arrival last December. The damaged corn was taken out at the Eastern Elevator. Capt. B. F. Bruce and Capt. John Rice will hold a survey to ascertain the extent of the damage to the cargo. The steamer City of Glasgow, which has a cargo of corn was also found to have considerable water in her when sounded and it was reported that the steamer was on the bottom recently while lying in the Blackwell canal and must have become strained, causing a leak. Pumps set to work, however, soon cleared the water out of her. It is believed that several other vessels holding winter cargoes are in the same shape, owing to the fact that they had been on the bottom during a low stage of water in the harbor here.

DETROIT, MICH.

Special Correspondence to The Marine Record.

The Detroit Dry Dock Co. has increased its capital stock from $200,000 to $400,000.

The frames for the steamer for C. R. Jones, of Cleveland, are all up at the yards of the Detroit Dry Dock Co.

F. W. Wheeler & Co., at their West Bay City yard are rebuilding the steamer W. P. Thew, which was partially destroyed by fire last season. The Thew is to be ready for business by the opening of navigation.

At the grand lodge Shipmasters' Association held here last week the following officers were elected for the ensuing term: President, C. Benham, Cleveland; first vice president, George McCullagh, Detroit; second vice president, W. S. Mack, Cleveland; treasurer, Lyman Hunt, Buffalo; secretary, W. A. Collier, Cleveland; chaplain, George A. Shaw, Marine City, Mich.; marshal, F. D. Welcome, Buffalo; warden, Robert Young, Chicago; sentinel, W. E. Rice, Port Huron. Washington was selected as the next place of meeting.

Mr. Tubal C. Owen, well known as president of the Escanaba & Lake Michigan Transportation Co., died at his home in this city, on Monday afternoon, aged 75 years. He was by profession a lawyer, and practiced at Marine City for several years prior to his coming to Detroit twenty-three years ago. He lived in Detroit until last summer, when he removed with his family to Northville, the home of his only married daughter, Mrs. W. I. Ely. Mr. Owen has left a widow and two daughters, Miss Owen and Mrs. Ely, of Northville. Charles Owen, of Bay City, is an only brother, and Dr. Orville W. Owen of Detroit, is a nephew.

TORONTO, ONT.

Special Correspondence to The Marine Record.

Of course you have heard of the Globe fire; also about the lion and the lamb, etc.

The north wind did blow, and we did get snow, heaps of it.

Capt. Crawford, who was last season in the Goodorham steam yacht Cleopatra and formerly in the steamer Macassa, of the Hamilton Steamboat Co., has been reinstalled as master of the Macassa, to supercede Capt. W. Zealand. Capt. Zealand has secured a more lucrative appointment.

Capt. Thomas Lowndes will command the steamer Mazeppa at Hamilton next season.

Capt. A. M. Sharpe has been re-engaged by the Hamilton Steamboat Co. to sail the steamer Modjeska.

The steamboats of the Niagara Navigation Co. are to have the same masters who had command of them last season: Chippewa, Capt. McGiffen; Cibola, Capt. Solmes; Chicora, Capt. Harbottle.

The annual report of harbor-master Morgan Baldwin has been issued.

This story may have been told often before, but it is so rich that it can easily bear repeating: A British man of-war was lying off Gibraltar, and the seamen were given leave to go ashore. Among the amusements they indulged in on land was donkey-riding. Most of the men had never up to that time been mounted, so that some of their antics were ludicrous in the extreme. One sailor was observed by an officer of the ship seated too far toward the tail of a donkey. "Hi, Jack," exclaimed the officer, "get up more amidships." Assuming an injured expression of countenance, Jack retorted: "Well, sir, this is the first craft as ever I commanded; and surely 'tis a pity if I can't ride out on the quarter-deck should I have a mind to."

The Canadian Marine Engineers' Association have elected their officers for 1895, as follows: President, O. P. St. John, re-elected by acclamation; first vice-president, E. J. O'Dell; second vice president, J. S. Adam; council, J. Banks, R. J. Parsall, W. Harwood, J. Findlay and R. Hughes; treasurer, J. H. Ellis, re-elected by acclamations; secretary, F. E. Smith, re-elected by acclamation; auditors, S. A. Mills and D. L. Foley; inside guard, J. Hopkins.

One of the most familiar figures at Hanlan's Point for the last few years was ticket-lifter "Tom" Noonan. He has shouted "tickets" and "this way for Yonge street" for the final time. Frequenters of the Island will regret to learn that Mr. Noonan died at the General Hospital on Saturday morning of tuberculosis, after a tedious illness, his age being only forty-nine years. He was a big, strong man, and was one of the most popular of the employes of the Toronto Ferry Co., with whom he had been ever since that corporation's inception. Before that he was connected with the Turner Ferry Co. and other lines. He came to this port ten years ago from Jersey City, N. J.

PORT HURON, MICH.

Special Correspondence to The Marine Record.

Mr. Wm. Adams, a marine artist, has painted in oil a fine picture of the tug C. L. Boynton, for her owner C. L. Boynton. It is a credit to the artist.

Capt. Alex Johnson, last year master of the steamer I. J. Boyce, will have command of one of the Mills' Transportation Co. boats the coming season.

It will cost the city of Port Huron $100 to find out whether the ice in Black River is impure or not. Several cakes of ice will be sent to the University of Michigan for analysis. If the city would send a sample of the Black River water about July they would say at once that it was very rank.

The schooner Eagle Wing, capacity 280,000 feet of lumber, was sold at auction this week for $315. She had on 500 tons of soft coal, which was purchased by John Jenkinson, a local coal dealer, who paid $580 for the cargo. It is a very dear purchase unless business for that size boats picks up during the coming season.

Lumbering operations in the upper peninsula are much retarded by the enormous snow fall. Many million feet of lumber burned over by the forest fires last all must be cut before spring or the pine will be a total loss. The delay for want of snow before Christmas has already caused the loss of millions of feet.

The Huronia M. E. B. A., No. 43, gave their eleventh annual ball at the Guard's Armory on Wednesday evening. The committees were as follows: Arrangement committee—Walter Thom, James A. Southgate, Harvey Depuy, C. G. Miner, George Ingham. Reception committee—George A. Miller, E. M. Murdock, Peter Finney, Thomas Treleaven. Floor commitee—W. P. Boynton, J. H. Fitzgerald, Irvin Buzzard, Arthur Armson. Supper committee—L. C. Purdy, Edward Harvey, R. B. Buchanan, James M. Oag. Decoration committee—George Bowen, W. P. Boynton, Edward Moore, L. C. Purdy, R. B. Buchanan, Peter Finney, Henry Rondeau, Peter Mullen. The music was by Symington's orchestra.

NEW STEERING AND SAILING RULES FOR THE LAKES.

The following changes embodied in a bill known as the White bill has been introduced in the House this week and is being strenuously supported at Washington by the Lake Shipmasters' Association and committees from the Lake Carriers' Association. Owing to the length of the articles we only print the rules wherein what may be considered changes from former lake practice occurs:

A BILL TO REGULATE NAVIGATION ON THE GREAT LAKES AND THEIR CONNECTING AND TRIBUTARY WATERS.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that the following rules for preventing collisions shall be followed in the navigation of all public and private vessel of the United States upon the Great Lakes and their connecting and tributary waters as far east as Montreal, Quebec.

FOG SIGNALS.

Rule 14—A steam vessel shall be provided with an efficient whistle sounded by steam or by some substitute for steam placed before the funnel not less than eight feet from the deck, or in such other place as the local inspectors of steam vessels shall determine, and of such character as to be heard in ordinary weather at a distance of at least two miles, and with an efficient bell, and it is hereby made the duty of the United States local inspectors of steam vessels when inspecting the same to require each steamer to be furnished with such whistle and bell. A sailing vessel shall be provided with an efficient fog horn sounded by a bellows or other mechanical means and with an efficient bell.

Whenever there is thick weather by reason of fog, mist, falling snow, or heavy rainstorms, whether by day or by night, fog signals shall be used as follows:

(a) A steam vessel under way, excepting only a steam vessel with raft in tow, shall sound at intervals of not more than one minute, three distinct blasts of her whistle.

(b) Every vessel in tow of another vessel shall, at intervals of one minute, sound four bells on a good and efficient and properly placed bell as follows: By striking the bell twice in quick succession, followed by a little longer interval, and then again striking twice in quick succession (in the manner in which four bells is struck in indicating time).

(c) A steamer with a raft in tow shall sound at intervals of not more than one minute a screeching or Modoc whistle for from three to five seconds.

Rule 15—Every vessel shall, in thick weather, whether caused by fog, mist, falling snow, or heavy rainstorms go at moderate speed. A steam vessel hearing, apparently not more than four points from right ahead, the fog signal of another vessel shall at once reduce her speed to bare steerageway, and navigate with caution until the vessels shall have passed each other.

STEERING AND SAILING RULES—STEAM VESSELS.

Rule 17—If two steam vessels are meeting end on or nearly so, so as to involve risk of collision, the helms of both shall be put to port, so that each may, by directing her own course to starboard, pass on the port side of the other.

Rule 18—If two vessels under steam are crossing so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way of the other.

Rule 20—Every steam vessel, when approaching another vessel, so as to involve risk of collision, shall slacken her speed, and, if necessary, stop and reverse.

Rule 21—Notwithstanding anything contained in these rules every vessel overtaking any other shall keep out of the way of the overtaken vessel.

Rule 22—Where, by any of the rules herein prescribed, one of two vessels shall keep out of the way, the other shall keep her course and speed subject to the provisions of rule twenty and the qualifications of rule twenty-eight.

Rule 24—That in all narrow channels (where there is a current) and in the rivers Saint Mary, Saint Clair, Detroit, Niagara, and Saint Lawrence, where two steamers are meeting, the descending steamer shall have the right of way, and shall, before the vessels shall have arrived within the distance of one mile of each other, give signals signifying which side she elects to take.

Rule 25—In all channels on the Great Lakes and their tributary and connecting waters less than five hundred feet in width, no steam vessel shall pass another going in the same direction unless the steam vessel ahead be disabled and signify her willingness that the steam vessel astern shall pass; when the steam vessel astern may pass, subject, however, to the other rules applicable to such a situation. And when steam vessels proceeding in opposite directions are about to meet in such channels, both such vessels shall be slowed down to a moderate speed, according to the circumstances.

Rule 26—In all weathers a steam vessel under way in taking any course authorized or required by these rules shall indicate that course by the following signals on her whistle, to be accompanied whenever required by corresponding alteration of her helm:

One blast to mean, "I am directing my course to starboard."

Two blasts to mean, "I am directing my course to port." But the giving or answering signals by a vessel required to keep her course shall not vary the duties and obligations of the respective vessels.

Rule 27—If the pilot of a steam vessel to which a passing signal is sounded deems it unsafe to accept and assent to said signal, he shall not sound a cross signal; but in that case, and in every case where the pilot of one steamer fails to understand the course or intention of an approaching steamer, the pilot of such steamer so receiving the first passing signal, or the pilot so in doubt, shall sound several short and rapid blasts of the whistle; and if the vessels shall have approached within half a mile of each other both shall reduce their speed to bare steerageway, and, if necessary, stop and reverse.

Rule 28—In obeying and construing these rules, due regard shall be had to all dangers of navigation and to any special circumstances which may render a departure from the above rules necessary in order to avoid immediate danger.

Rule 29—Nothing in these rules shall exonerate any vessel, or the owner or master or crew thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper lookout, or of a neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

Sec. 2—That all laws or parts of laws, so far as applicable to the navigation of the Great Lakes and their connecting and tributary waters as far east as Montreal, Quebec, inconsistent with the foregoing rules, are hereby repealed.

Sec. 3—That this act shall take effect on and after March first, eighteen hundred and ninety-five.

MARITIME LAW.

WEBSTER v. DISHAROON.

District Court, D. Maryland.

COLLISION—VESSEL NAVIGATED BY OWNER PRO HAC VICE—OWNER'S LIABILITY IN PERSONAM.—Master running vessel on shares, paying all wages and expenses, and having sole control of navigation, is owner pro hac vice, and for collision resulting from negligence of himself or crew the owner is not liable in personam. Thorp v. Hammond, 12 Wall, 416, applied. This was a libel in personam for collision, filed by John P. Webster against A. C. Calvin Disharoom.

MORRIS, District Judge.

MUNSON v. THE VILA.—GIERSTEN ET AL v. THE SAME.

District Court, E. D. New York.

SALVAGE—RIGHTS OF CHARTERER—WAIVER.—A provision inserted in a charter party for the charterer's benefit, forbidding the ship to stop to pick up any wreck, or in any way assist or tow any vessel, without an exception even for saving life, amounts to a waiver by the charterer of any claim for salvage earned by the ship by towing in a derelict.

SAME—COMPENSATION—DERELICT.—Three thousand dollars, upon a valuation of $8,108.70, allowed to the owners of a steamer for towing into New York, her port of destination, a dangerous derelict found 40 miles at sea, in fair weather, and with a delay of 24 hours.

BENEDICT, District Judge. These two actions are brought to recover salvage compensation for services rendered to the bark Vila and her cargo by the steamer Breidablick on Aug. 30, 1893. The Breidablick was a steamer under charter to the libelant, Munson. At the time of the rendition of the salvage service she was bound to New York, where, upon her arrival, her charter would expire. When nearing New York on her regular course, the Breidablick fell in with the bark Vila, a derelict about 40 miles from shore, on the afternoon of August 30th. The wind at the time was very light, the sea calm enough to permit the sending of a boat's crew to the derelict. The derelict was found to be apparently sound in her hull, with 24 or 25 inches of water in her. She had a cargo consisting of rags and bones. The Vila's own hawser was taken on board the Breidablick, and the Vila was then towed to New York, where she arrived at the Highlands about 8 o'clock on the night of August 31st, and at 3 o'clock the next morning was anchored off Quarantine, Staten Island. The weather during the time was always favorable, and no damage of any kind was sustained by the steamer in rendering the service. The Breidablick did not deviate from her course, but was detained about 24 hours. The Vila was no doubt in some danger. She was a derelict in the Atlantic ocean. She was, however, leaking but slightly, was in no danger of foundering, and was capable of remaining afloat for an indefinite time. The cargo was not of a perishable nature, and she was in the general track of vessels passing between southern ports and New York, far enough from the shore to be in little danger from that source, and where it was almost certain that she would be sighted in a very short time by some of the numerous vessels at all times passing there. In her condition and position she was a source of danger to other vessels.

The charterer, Munson, has filed a libel, claiming to be entitled to the salvage. It appears that he should pay port charges, pilotage, agencies and commissions, the owner providing and paying for provisions and wages, consular, shipping and discharging fees; and it also contained the following clause: "On account of the perishable nature of the cargoes that this ship is intended to carry, she is not allowed to stop to pick up any wreck, or in any way assist or tow any vessel, especially when by so doing she is liable to be detained." For delay of the steamer twenty-four hours the charterer paid the ship owner at the charter rate, $68, together with $28 for eight tons of coal. In my opinion, the insertion of such a clause in the charter party amounts to a waiver of any claim for salvage on the part of this charterer, if such claim existed. He made a contract which would prevent the rendition of salvage services, without the merciful exception of a deviation for the purpose of saving life, and he secured to himself a right of action against the shipowner. To that he must be confined. The libel of the charterer is therefore dismissed, and with costs.

No appearance having been entered in behalf of the vessel, and the proceeds of her sale having been eaten up in expenses, the only unsettled question is as to the amount of salvage to be paid by the freight and cargo. The freight has been valued at $494.17, and the cargo at $7,614.53. Taking all the circumstances into consideration, I am of the opinion that a suitable salvage compensation for the services rendered in towing in this dangerous derelict would be $3,000. Inasmuch as there has been no appearance for the freight, the whole of the freight, $494.17, may be awarded to the salvors, and, deducting that from $3,000, leaves the sum of $2,505.83 to be paid by the cargo.

ST. MARY'S FALLS CANAL TRAFFIC.

The superintendent of St. Mary's Falls Canal, Mr. E. S. Wheeler, has just had compiled a sheet of valuable statistical matter relative to the traffic at "Soo" Canal from the time of its opening in 1885 up to the close of the last season. The following official statistics are taken from Mr. Wheeler's report:

ESTIMATED VALUE OF FREIGHT, BY ITEMS, THROUGH ST. MARY'S FALLS CANAL, MICHIGAN.

ITEMS.	1887.	1888	1889.	1890.	1891.	1892	1893	1894
Coal (Hard and Soft),	$ 4,735,454	$ 7,367 644	$ 5 702.190	$ 7,619,238	$ 8,776,362	$ 10,164,931	$ 10,528,420	$ 8,191,917
Flour	7,863 675	10.953 625	11 143.535	16,195.520	18 900,715	21,672 540	29.682.696	33.621.649
Wheat	22,634 590	18.224 424	15,907 217	15 893 022	38,040.239	30.746,085	32,611.239	22.316.469
Grain (other than wheat)	759 653	1.981.862	2 090 580	2 003.456	1,011.462	933 346	1.346 993	772.504
Manufactured Iron	3,035.750	2.442.950	1.577 250	4.680.750	2,128 000	2 988.600	2.852.300	1.805.350
Pig Iron	241.468	252.348	442 272	386.104	462,077	709 716	550.902	331.452
Salt	204.908	210.433	168 250	179 431	234 528	275 740	228.730	237.461
Copper	6,977.200	5.792 000	6 691.200	8.745.800	13.838 000	12 998 600	17.506.000	19.914.600
Iron Ore	8.741,995	8.996 808	14,335,492	16.711,688	12,460,744	17.153,962	14.050.946	17.027.078
Lumber	2,974 068	4.326.696	5,679.972	6,514.722	6,593,490	9,231.192	10.593.810	11.564.608
Silver Ore and Bullion	53.826	520 579	914,589	527.807	266 211	296.815	379.861	46.144
Building Stone	134,010	335 410	335 380	479.730	440,800	396,980	194.260	214.170
Unclassified Freight	20 675,160	20.751,240	18,744 600	22.277,640	25,025.580	27.548.760	24.910.800	27.071.100
Total	$79.031,757	$82.156,019	$83.732,527	$102 214.948	$128,178.208	$135.117 267	$145.436.957	$143 114.502

RESULTS OBTAINED FROM DISCUSSION OF TRAFFIC STATISTICS.

SEASONS.	Total Mile-Tons.	Total Cost of Transportation.	Cost of Carrying Per Mile. Ton.	Average Distance Freight was Carried.	Value of American Craft.	Value of Canadian Craft	Propor'n of Freight Carried by Canadian Vessels.
1887	4,458,544,804	$10,075,153	2.3-10 Mills.	811 4-10 Miles.	$17,684,550	$2,089,400	7 Per Cent.
1888	5,173,132,972	7,883,077	1.5-10 "	806 4-10 "	20,381,100	1,514,300	6 "
1889	5,940,646,352	8,634,247	1.5.10 "	790 4-10 "	25,328,600	1,597.600	4 "
1890	7,207,299,415	9,472,215	1.3-10 "	797 2-10 "	27,857,700	1,777,800	3½ "
1891	7.292,462,269	9,849,023	1.35-100 "	820 4-10 "	31,947,300	2,119,500	4 "
1892	9,222,773,938	12,072,851	1.31-100 "	822 4-10 "	36,220,100	2,108,700	3 8-10 "
1893	8,980,310,240	9,957,483	1.1-10 "	831 9-10 "	39,017,400	2,115,700	4 1-10 "

FREIGHT RATES FOR WATER TRANSPORTATION TO AND FROM LAKE SUPERIOR

ITEMS.	DESIGNAT'N.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
Coal	Net tons.	$ .90	$ .70	$ .47	$ .45	$ .43	$ .41	$ .40
Flour	Barrels.	29	.17½	.18	.13	.15	.16½	.17
Wheat	Bushels.	.07	.03½	.04	.03	.046-10	.036-10	.028-10
Grain	"			.03¼	.02	.03½	.03¾	.02¾
Corn	"		.04⅓		.03			
Manufactured Iron	Net Tons.	2.35	1.80	2.10	1.34	2.50	2.15	2.00
Pig Iron	"		1.30	1.45	1.35	1.17	1.23	1.30
Salt	Barrels.	.18	.16	.18	.15	.18	.15	.12
Copper	Net Tons.	2.60	2.35	2.25	2.38	2.00	1.40	1.75
Iron Ore	"	1.75	1.28	1.14	1.10	.98	1.00	.80
Lumber	M. Ft. B. M.	4.00	2.80	2.70	2.38	2.70	2.95	2.35
Silver Ore	Net Tons.	3.00	1.90	1.90	2.25	2.25	2.25	2.25
Building Stone	"	1.15	2.05	2.02	2.00	2.00	1.67	1.36
Unclassified freight	"	4.00	3.00	3.00	2.75	3.58	3.60	3.00

ABOLITION OF BONDS ON THE DOCUMENTING OF VESSELS.

TREASURY DEPARTMENT, BUREAU OF NAVIGATION,
WASHINGTON, D. C., January 16, 1895.

The attention of collectors of customs and others is invited to the following act of Congress, approved January 16, 1895, abolishing the custom house bonds heretofore required to be given on the issue of registers, enrollments and licenses to vessels of the United States:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section forty-one hundred and forty-five of the Revised Statutes, providing for bonds for registry of vessels, is hereby repealed.

SEC. 2. That section forty-one hundred and forty-six of the Revised Statutes is hereby amended so as to read:

"SEC. 4146. A certificate of registry should be solely used for the vessel for which it is granted, and shall not be sold, lent, or otherwise disposed of, to any person whomsoever; and in case the vessel so registered shall be lost, or taken by an enemy, burned or broken up, or shall be otherwise prevented from returning to the port to which she may belong, the certificate, if preserved, shall be delivered up within eight days after the arrival of the master or person having the charge or command of such vessel within any district of the United States, to the collector of such district; and if any foreigner or any person for the use and benefit of such foreigner, shall purchase or otherwise become entitled to the whole or any part or share of, or interest in such vessel, the same being within a district of the United States, the certificate shall, within seven days after such purchase, change or transfer of property, be delivered up to the collector of the district; and if any such purchase, change or transfer of property shall happen when such vessel shall be at any foreign port or place, or at sea, then the master or the person having the charge or command thereof shall, within eight days after his arrival within any district of the United States, deliver up the certificate to the collector of such district. Any master or owner violating the provisions of this section shall be liable to a penalty of not exceeding five hundred dollars, and the certificate of registry shall be thenceforth void. The Secretary of the Treasury shall have the power to remit or mitigate such penalty if in his opinion it was incurred without willful negligence or intention of fraud."

SEC. 3. That section forty-three hundred and twenty, Revised Statutes, is hereby amended so as to read:

"SEC. 4320. No licensed vessel shall be employed in any trade whereby the revenue laws of the United States shall be defrauded. The master of every such vessel shall swear that he is a citizen of the United States, and that such license shall not be used for any other vessel or any other employment than that for which it was specially granted, or in any other trade or business whereby the revenue of the United States may be defrauded; and if such vessels be less than twenty tons burden, the husband or managing owner shall swear that she is wholly the property of citizens of the United States; whereupon it shall be the duty of the collector of the district comprehending the port whereto such vessel may belong to grant a license."

SEC. 4. That no bond shall be required on the licensing of yachts; no licensed yacht shall engage in any trade, nor in any way violate the revenue laws of the United States; and every such yacht shall comply with the laws in all respects.

SEC. 5. That any master or owner violating the provisions of this or the preceding section shall be liable to the penalty of two hundred dollars, in addition to any other penalty imposed by law. The Secretary of the Treasury shall have power to remit or mitigate any such penalty if in his opinion it was incurred without negligence or intention of fraud.

SEC. 6. That this act shall not invalidate the bonds heretofore given under the requirements of law.

The blank forms for registry, enrollment and license now in use may continue to be used until further instructions, on the insertion after the word "bond" or "security," of a reference to a note, which should be made at the bottom of each form, as follows:

"Bonds abolished by act of January 16, 1895, but conditions formerly embodied therein must be observed under penalty."

EUGENE T. CHAMBERLAIN, Commissioner.

Approved: J. G. CARLISLE, Secretary.

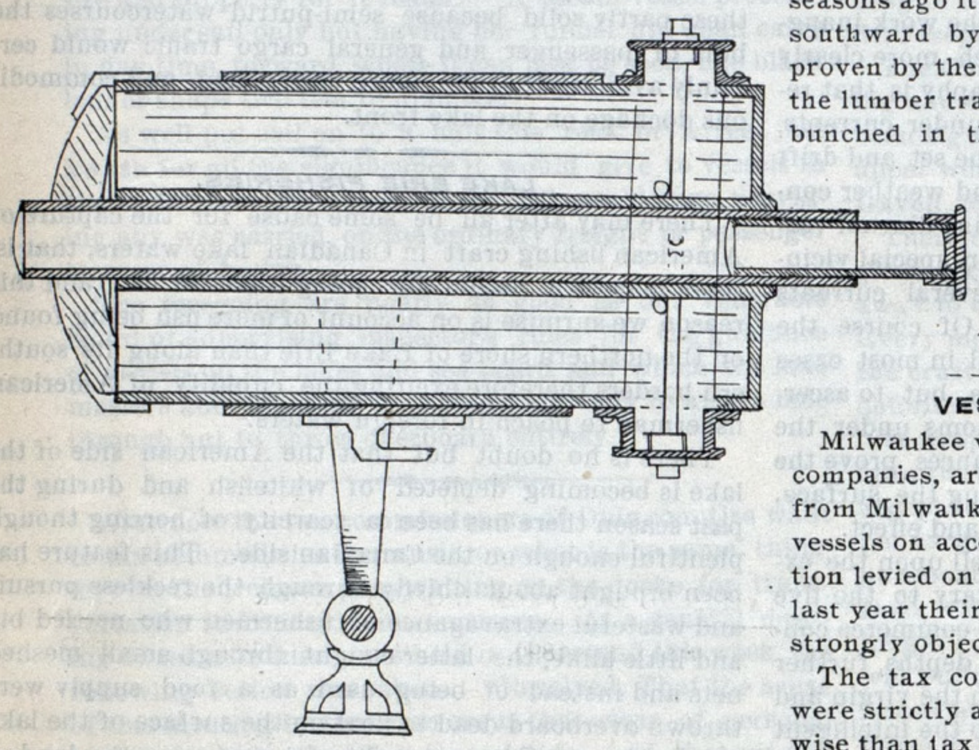
A NEW SEARCH LIGHT.

(ILLUSTRATED.)

Among the many improvements for the efficient equipment of steamers it is gratifying to note that we quite frequently are in a position to record the inventions in this respect of lake pilots, masters and engineers.

One of the latest improvements in electric search lights is that of Charles A. Potter, last season second mate of the Clover Leaf Steamboat Liner John Pridgeon Jr., Toledo, O. and which according to the inventor will develop double the efficiency of any search light yet devised, this claim being made chiefly on the grounds of the new light being accompanied with a powerful telescope attachment. The telescope which is essentially a part of the mechanism, or apparatus is situated directly in the center of the light so that the darkness or fog can be penetrated at a much greater distance than by the aid of the light alone, a compass dial may also be attached for noting the alteration of difference in bearings of a distant object.

The telescope arrangement is constructed in a suitably mounted chamber of cylindrical form closed to the light at one end and having a lens across its other end. This chamber is provided with a central passage open at



THE POTTER ARC LIGHT WITH 8 CARBONS OF 100,000 CANDLE POWER.

both ends for the reception of a magnifying instrument. The inner surface of the chamber and the outer surface of the central longitudinal passage have reflected surfaces and a light placed within the chamber at its closed end is sufficiently intensified by the reflecting surfaces to penetrate the darkness, haze or fog and intercept any object within the range of the transmitted light for examination at the instrument.

The recent tests at Sandy Hook by government officials with a two million candle power search light were pronounced highly satisfactory, yet so powerful an apparatus is completely outside the reach of ordinary commercial ventures such as passenger and other steamers running on schedule time. Mr. Potter however, claims that more powerful results can be obtained through the use of his search light having only one hundred thousand candle power than has been shown by the Sandy Hook tests of the big light with two million candle power.

The decreased cost of the Potter search light as compared with similar power in the apparatus at present in use allows the inventor to claim that even a small search light with the telescope and magnifying attachments in use would be of the greatest value for coast defense and prominent life-saving stations, also for vessel reporting stations, and as a general means of safe navigation through narrow waters.

A LAKE MICHIGAN EXPERIENCE OF CURRENTS.

William Brauer, of Milwaukee, relates an experience on Lake Michigan which has a strong bearing upon the question of currents on the Great Lakes now more or less under discussion. He says:

The present discussion of the currents in the lakes reminds me of a time some seven or eight years ago, when I sailed in a lumber carrying steamer commanded by Capt. William J. Coleman, plying between Muskegon and Chicago. Our courses, although invariably steered as a helmsman could point her, would always vary more or less to the southward going to Chicago and more or less to the eastward going to Muskegon. We left Muskegon one calm night, steering the course that had the trip before carried us pretty close to the Chicago avenue waterworks crib. In the morning it was foggy and we could not see or hear anything to indicate the whereabouts of Chicago harbor. So we stopped when the time was up and distance run. We were stopped two hours, and when finally the fog cleared away we saw that we were off Oakland boulevard, or about one mile north of Hyde Park inner shoal. The mate was struck with the peculiarity of being carried six miles to the southward on a course of 110 miles and that, too, in calm weather. So he decided to discharge both of us wheelsmen for incapacity. But while lying at Rush street bridge the steamer Emma E. Thompson arrived in port and her captain reported having been carried within a few miles of Calumet harbor while steering his usual course for Chicago. This set my superior officers to thinking, and I held my position for two seasons afterward.

When the steamer Wisconsin found the bottom at the south point of Milwaukee Bay in thick weather several seasons ago it was because she had been carried to the southward by a current during the night. This was proven by the experience of three or four steamers in the lumber trade, which, on the same morning became bunched in the bight between the Bay View rolling mills and St. Francis seminary when they should have been entering the bay from the northward. Their officers had not been able to hear the steam fog horn on the north harbor pier, as is often the case in thick weather.

VESSEL TAXES AT MILWAUKEE.

Milwaukee vessel owners, constituting several large companies, are persistent in their determination to move from Milwaukee and change the hailing port of their vessels on account of what they say is exorbitant taxation levied on them by the city. By the assessment of last year their taxes were raised considerably and they strongly object to the advance.

The tax commissioner says the assessments made were strictly according to law and he could not do otherwise than tax vessels registered there the same as other property is taxed and properly perform his duties.

The vessel owners are preparing to organize under laws of other states where they claim taxation will be lower. It is, however, reasonably probable that they will be spared that trouble by the enactment of a law by the legislature this winter regarding the taxation of vessels and under which the volume of taxes will be made satisfactory to the vessel men. A bill to that effect is being prepared, and if it passes the Wisconsin legislature the whole matter will be amicably adjusted. That is said to be really what the vessel owners want, and there will likely be little objection to the enactment of such a law, as the argument will be raised in its favor that it will be better for Milwaukee to receive a moderate revenue from the taxation of vessels than to have the companies remove from that port and get nothing. The vesselmen seem determined to either secure to themselves a satisfactory rate of taxation or organize elsewhere and register their vessels at other ports.

MORE NEW LAKE TONNAGE.

In addition to the several new contracts for lake tonnage reported in our issue of the 17th inst., there has been another contract placed this week with the Cleveland Shipbuilding Co. for a steel steamer of the following dimensions: 400 feet over all, 375 feet keel, 45 feet beam and 28 feet molded depth, built to the order of Messrs. R. R. Rhodes, Capt. John W. Moore, John Bartow and Capt. David Vance. The new ship is to be completed about the middle of August. With one exception that of the steamer recently contracted for with the Chicago Shipbuilding Co., the new boat will be the largest afloat on fresh water. The only difference in size is three feet beam in favor of the Chicago ship. Her engine will be an exact duplicate of that which the Cleveland Shipbuilding Co. has contracted to construct for the Chicago boat and of the engines which the Cleveland company built last year fer the steamer Kearsarge. They will be of the inverted cylinder, triple expansion type, with cylinders 23, 38, and 63 inches in diameter by 40 inches stroke of piston. Steam will be supplied from two Scotch-type boilers, 14 feet in diameter and 13 feet in length, each boiler to be fitted with three 46-inch furnaces to be allowed 160 pounds of steam. The engines will be in the after end of the boat. She will have 11 hatches, with 24 feet centers, five gangways on each side with hoisting gear at each hatchway and will be lighted by electricity. She will be fitted with the Williamson steam steering gear and the American Ship Windlass Co. steam capstans and windlass. She will be a modern freighter in every respect. The cabin is forward will be of the barge style. Several modern inventions in the way of improvements will be introduced in the fitting of the boat, and will be outlined later on. The ship will be built under the inspection and classification of the United States Standard Register. Mr. Sinclair Stuart will be in the city in a few days to complete arrangements for her survey during construction.

This contract gives the Cleveland Shipbuilding Co. two large steamers to get out the coming season, besides the machinery for the big steamer building at South Chicago for the Interlake Shipping Co., of Cleveland. In addition to the present force of the company a large gang of men will be put to work on the new boat. General Manager James Wallace stated that some of the material to be used in the boat will be at the yard this week.

Following closely upon the foregoing is another contract closed by the Chicago Ship Building Co., of South Chicago, for a steel steamer to be built to the order of a syndicate of Duluth and Chicago capitalists interested in iron mines. This second steamer is to be an exact duplicate of the one contracted for a week ago, and to have the following general dimensions: 405 feet over all, 380 feet keel, 48½ feet beam, 28 feet molded depth and 5½ feet water bottom, with a duplicate of the engines in the steamer Kearsarge and water tube boilers. The power will be sufficient to drive the craft through the water at the rate of fourteen miles an hour. Her carrying capacity will be 4,200 gross tons on 14½ feet and 6,000 gross tons on 18 feet. The contract calls for her completion by June 15, but she can hardly be got in readiness for business before July 1. The new steamer is intended for the Lake Superior iron ore and coal trade. As in the case of the steamer already under contract at the same yards, the cost complete is figured at $225,000. The construction of these two monster vessels will give employment to 700 men in the South Chicago yard alone. The engine of this latest contract, as well as the engines and boilers of the previous one, will be built by the Cleveland Ship Building Co., but the boilers for the new contract are to be of the Babcock & Wilcox type. With these two steamers and the two large steel towbarges now well under way the Chicago Ship Building Co., will contribute 18,000 tons to the carrying capacity of the lakes by midsummer.

THE U. S. STEAMBOAT INSPECTION SERVICE.

The New York *Herald* has been criticising at length the methods of the United States Steamboat Inspection Service. Introducing this attack it says that "if the coming congress desires to correct a national abuse of a most serious character and institute a reform of the greatest possible importance, it will authorize a senatorial investigation of the present methods and conditions.

"While the system is inefficient generally," says the *Herald*, "it is a fact that the actions of the inspectors in one district are different from the course of inspectors in another; that different examinations of vessels are made in one district than another; that a steamboat ineligible for service in one district is easily passed in another, and that the same is the case with the inspectors licensing officers. Different rules apply, different examinations are required, and the standard of excellence in one district is far too low for the requirements of another. It is a fact that, as a rule, the inspectors are not qualified to inspect types of ship which have lately developed in the shipyards, both upon the coast, lakes and rivers; that the whole system under which the service is operated is radically bad, and that reform or alteration will not be tolerated by the inspector general of the service because he claims that the maximum of efficiency now, and a change would mean an admission of inefficiency.

In a recent issue of the *Herald* seven columns are devoted to bringing proof of these assertions, in which the lakes come in for their share of attention.

THE MARINE RECORD

ESTABLISHED 1878.

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CLEVELAND, O., JANUARY 24, 1895.

WITH the placing of contracts for steel steamers of over 400 feet in length at lake shipyards the comparison between lake and coastwise tonnage becomes more clearly defined. A special from the seaboard states that the contract for building a steel steamship which will be one of the largest vessels engaged in the coastwise trade, has been awarded by William P. Clyde & Co. to Cramp & Co , of Philadelphia. The new steamer will be of 3,500 tons register, 325 feet long, 46 feet beam, and 30 feet depth of hold. She wili be driven by engines of the quadruple expansion type, working with steam at 200 pounds pressure. She will have accommodations for 150 passengers and her freight handling appliances will be of the best modern pattern. Given the same draft of water and an easy 6,000 tons would be carried regularly in the late tonnage contracted for on the lakes, besides which, there are several 5,000 ton craft now afloat if any draft more than ballast trim could be secured for lake transportation.

STRICT rating and classification of new tonnage must perforce be the order of the day if lake builders and owners purpose holding lake vessels as the peers of any afloat. We do not know of our own knowledge that any departures from the published rules of the several classification societies doing business on the lakes have been permitted, or are likely to be, but with steamers of 400 feet in length and 6000 tons capacity there should be no laxity in the duties of regular inspection during construction and up to their final equipment. This system, if it may so be called, of surveys and classification ratings which calls upon owners to expend from five to seventy-five thousand dollars after each season's work in the strengthening and necessary structural repairs to their large steel steamers does not seem to be altogether in order, nor does it reflect with any amount of honest luminosity on the value of a classification certificate, behind which either owners or builders can, or should be in a position to take refuge.

RELATIVE to the action of the international marine conference and the board of supervising inspectors of steam vessels in altering, amending and placing restrictions on vessels and licensed officers, the lake masters and pilots hope that within a few years a board of navigation may be created, and that licenses shall be required of masters of sailing vessels as well as steamers. As matters now exist the master of a sailing vessel has no necessary qualifications, and is responsible to no one but his owner, although he is frequently in a position to do as much to cause a collision or wreck as a man in charge of a steamboat. There is now a commissioner of navigation, but his duties are largely of a statistical nature. The masters hope for a solution of this problem in the much-talked-of department of commerce, a cabinet position which it is hoped to create, under which might be organized a maritime board with jurisdiction over steam, sail, and unrigged vessels alike. This would revolutionize the whole inspection service, and would, they hope, purify and strengthen it, which is about the only reasonable verdict that qualified men could arrive at after a trial of over a quarter of a century on the present lines.

HYDROGRAPHIC WORK.

The work now being done by the Hydrographic Office, Bureau of Navigation, Navy Department, Washington, D. C. under the direction of Charles D. Sigsbee, Commander U. S. Navy Hydrographer, should, and we believe does meet with the hearty endorsement and approval of all that go "down to the sea in ships," especially is the lake work commendable as nothing in this direction has ever been attempted before, if we omit the wreck and current charts issued by the Weather Bureau, Department of Agriculture, who were first in the field and opened up the hydrographic possibilities on the lakes for the Navy Department.

It would now appear that the branch Hydrographic offices already established on the lakes are nearly in a position to take over what may be termed the most distinctive part of their work from the hands of the Weather Bureau and that accordingly both departments will work together in harmony for the best interests of the vessel owner, navigator, pilot and underwriter, so that before the close of the coming season a large amount of data relating to the hydrography of the Great Lakes will be at hand for compilation and be issued in due course for the benefit of those most interested in the practical navigation and commerce of the inland seas.

One of the most important features of the work inaugurated by the Weather Bureau and which more clearly comes under the department of hydrography is that relating to currents, variable, surface or under currents, their prevalence in all localities, with the set and drift experienced under the varying season and weather conditions, giving an annual statement showing diurnal variations with the set for the months in special vicinities and the annual mean of the several currents as found from reliable observations. Of course the surface currents, their set and drift will in most cases be considered of the highest importance, but to ascertain what is going on a couple of fathoms under the surface would no doubt in many instances prove the key note in determining the economy ruling the surface, or at least, it would probably show cause and effect.

It is not our purpose at this time to dwell upon the expanse of territory covered by and tributary to the five Great Lakes, nor the value and volume of commerce conducted each season over their tracklesss depths, further than to point out the possibilities which the virgin and unexplored fields of hydrography offers to the intelligent and skilled student of nature's laws. As the late Lieut. Maury, U. S. N. studied, developed and published, for the good of the world at large, the economy which ruled and rules the winds and currents of the oceans, so also are the lakes ready and waiting for a successor to travel over the sister study and make us acquainted with the systems governing the hydrographic conformities or eccentricies of these great bodies of fresh water.

HARBOR IMPROVEMENTS.

The port of Cleveland seems to be desirous of taking the initiative in improving its lake front on lines commensurate with the certain requirements of commerce in the near future.

The harbor line, inside of which any or all improvements must be made by the municipality and not by the federal government, is, as is well known, situated about 1200 feet out from the present shore line and this valuable ground it is now intended to utilize for wharves, slips, jetties, etc., that is, if the city council can be keyed up to the executive standard by the chamber of commerce and the endorsement of the government engineer in charge of the district rivers and harbors.

In this departure there is an excellent opportunity for the port of Cleveland to mark an era in the building of dock frontage on the lakes and in such a manner as to put the ancient and present system of superstructures completely in the background. If, through an act of the Legislature the city laid claim to the ground extending from the railroad track paralleling the lake front, out to the harbor lines in the west harbor, a large number of wharves and slips could be built, the west arm of the breakwater being an all sufficient protection and with a substantial sea wall built of concrete blocks along the present harbor limits with suitable openings for wide slips and commodious jetties having several lines of railroad tracks laid thereon with others having cargo sheds and facilities for handling package and perishable cargo, the port would be given enough dock room to last, for at least a few decades.

In outlining the plans to facilitate commerce, transportion and shipping on the lake front, instead of as at present, guiding vessels along narrow, dangerous and putrid creeks such as are characteristic of all our principal lake ports, it would be well for those most interested to learn how open water frontage is utilized and made of incalculable value to the municipality and its commerce at other ports. In this connection the Australian plans at Melbourne perhaps furnishes a direct object lesson. The port of Melbourne itself is situated several miles up a narrow and tortuous river and but a small portion of the tonnage threads its way along that fairly clean, from a sanitary standpoint, though limited waterway. There are, however, two ports, one at each side the mouth of the Yarra Yarra having jetties built right out into Hobsons Bay and vessels lying there have less protection than would be afforded to craft moored at jetties built along the lake front, especially where a breakwater spanned the seaward approach, yet, without this protectiion, safe moorings are found and loading and discharging is generally carried on with as much ease as if the vessels were laying in a locked dock. These opportunities are positively available at lake ports, and, while certain commodities would undoubtedly seek river wharves and docks however far they might have to traverse up these partly solid because semi-putrid watercourses the bulk of passenger and general cargo traffic would certainly avail itself of the more convenient and commodious dockage on the lake front.

LAKE ERIE FISHERIES.

There may after all be some cause for the capture of American fishing craft in Canadian lake waters, that is, there may be a reason for going there to fish, and this reason we surmise is on account of more fish being found on the northern shore of Lake Erie than along its southern borders therefore exciting the cupidity of American fisherman to poach in foreign waters.

There is no doubt but that the American side of the lake is becoming depleted of whitefish and during the past season there has been a scarcity of herring though plentiful enough on the Canadian side. This feature has been brought about chiefly through the reckless pursuit and wasteful extravagance of fishermen who nettled bi- and little alike, the latter caught through small meshed nets and instead of being used as a food supply were thrown overboard dead to float on the surface of the lake or carted away ashore as refuse for manuring the land.

It can not be said that no one was aware of the food supply being cut off nor does it need evidence from the fishery and game commission to substantiate the irreparable loss to the states bordering on the south shore of Lake Erie which will be felt when the fishing industry comes to an end.

A recent report from the west end of Lake Erie states that the last of the fishing in that section for the season was the most disappointing ever known and that gill net tugs were unable to find herring within about 25 miles of Huron, O., having to sail to catch fish about north by east, which took them nearly to Point Pelee. This led the experts to infer that the herring had deserted the American shore, and while fishermen are proverbial optimists, they all unite in the opinion that the great lake fisheries will soon be but a memory. The shrinkage in the catch of herring—the staple of Lake Erie—is almost incredible. In 1885, 35 nets caught over 1,000,000 pounds of herring, and each year since then the catch has steadily decreased, until last fall, when their total catch of herring from 70 nets was only 70 tons—about one-fourteenth as much per net as in the first named year. The decrease in the catch in the pound nets on the west end of Lake Erie dates from the introduction of gill nets into these waters each year being considerably worse than the preceding one.

"There has been much agitation for several years of the question of preservation of fish in Lake Erie, and several laws have been framed by the pound and gill net factions, but the laws framed by one party have always been bitterly fought by the other, with the result that today the fishing laws in Ohio are practically inoperative, and the food fishes of the most productive body of fresh water in the world are rapidly becoming extinct. Stringent legislation to cover the abuses of both gill nets and pound nets should be passed without delay, limiting the gill nets to a certain depth of water, and the pound nets to a certain size mesh and a certain distance from shore. By this means only can the absolute depletion of the lake

be avoided, and one of the cheapest and most nutritious varieties of food be preserved."

It will be seen from the foregoing report that those most nearly interested are aware of the destruction going on, but whether legislative action will be taken remains to be seen. It would be of little use for one state to enact preservative laws. All the states bordering on the lakes will have to unite in legislation and join with the Canadian fishery interests if the lake is to to be kept fairly stocked, otherwise it is probable that the better enforced laws of Canada will keep that side of the lake full of fish and the American side scant.

THE revised steering and sailing rules of the Washington International Marine Conference, Art. 16, states as follows:

"A steam-vessel hearing, apparently forward of her beam, the fog-signal of a vessel the position of which is not ascertained shall, so far as the circumstances of the case admit, stop her engines, and then navigate with caution until danger of collision is over."

A steamboat navigating with caution when her engines are stopped is really too good a clause to let slip by.

Article 14, is not bad in its way either, as a guide to practical seaman and a never failing source of safety to life and property for it reads: "A steam-vessel proceeding under sail only but having her funnel up, shall carry in day time, forward, where it can best be seen, one black ball or shape two feet in diameter."

As well put sail on to a half tide rock or a reef just awash for all the significance it would give to vessels in the vicinity, or the power which sail would have, providing any was carried, on the ordinary freight or passenger steamer of to-day.

The foregoing are nearly as good as our venerable board of supervising inspector's rules for the guidance of vessels on the lakes and sea-board and which the lake masters and pilots are now ready not only to kick a hole through but to throw overboard entirely.

AND now the tax commissioners of Ohio counties want to tax commodities in transit, or what is the same thing, levy on the iron ore piles waiting on the docks for transportation to Pennsylvania furnaces. At a general meeting of tax commissioners held in Cleveland this week, the following action was taken: "Resolved, That the sense of this meeting be that iron ore is that class of personal property which is subject to taxation- and that we will authorize our assessors to assess the same at a fair, conservative, and market value." Well! if this is not taxation methods run mad we hardly know what it is. As well might railroad depots, and even freight trains passing through the state, grain elevators, coal piles awaiting shipment, etc., be levied on as iron ore on the dock, a portion of which is being carried away daily to the furnaces throughout the country. However, if so asinine a ruling should prevail and discharged cargoes of ore at Lake Erie ports be taxed for the year or any portion of it, the effect will be to decrease shipments from the mines and allow the ore to remain in its natural storehouse until furnaces are ready to use it. The Ohio tax commissioners ought to change the current of their deliberations and find out some more legitimate means of grasping a mulctuary instead of interfering in a derogatory manner with the ordinary channels of interstate commerce.

THE board of supervising inspectors of steamboats in their rules for the guidance of meeting, passing and crossing vessels and at every other possible opportunity, insisted for the past thirty years upon steam whistles being blown with or without provocation, or even cause or reason in many instances. The "rod they have had in pickle" so long is now brought on deck to lash their own shoulders, while they stand on the gridiron to take it and they are likely to be compelled to cry peccavi and admit that the whistle more than the wording of rules has been the potent factor in lake navigation. The punishment is richly deserved after so long a period of official technical somnolency.

LAKE LEVELS.

The Secretary of War has been interviewed regarding the theory that the Chicago Canal would result in lowering the waters of the Great Lakes. It is understood that Gen. Casey, the chief of engineers, ridicules the theory and is of the opinion that the amount of water that would be drawn from the lake by the canal would hardly be noticeable. Secretary Lamont, it is claimed, will be guided by General Casey's views and the chief of engineers simply laughs at the idea of lower levels. At the most the effect on the lake level, he says, will be scarcely appreciable. He thinks it entirely unnecessary to go to the expense and trouble of making special surveys to form a judgment on the matter.

It is known that the government engineers who have had most to do with lake surveys and lake improvements are of similar opinion with Gen. Casey and it is claimed that the scare about the injurious effect of the Chicago Canal had its origin with parties interested in opposition schemes. Whether that is true or not, an authoritative declaration from the government engineer department that the alleged danger is wholly visionary, will have the effect of quieting the anxiety expressed by shipbuilders, owners and the lake transportation interests generally, all of whose interests would be jeopardized by any appreciable lowering of the level of the lakes.

THE STEAMER CHICORA OVERDUE.

Grave fears are entertained for the safety of the Graham & Morton Line wooden steamer Chicora running in the winter service on Lake Michigan between St. Joseph and Milwaukee.

The Chicora left Milwaukee early on Monday morning and up to the time of going to press she has not been sighted but portions of wreckage consisting of her upper works have been picked up in the ice off South Haven, Mich.

There is of course the chance that the Chicora's engines may have broken down and that she has drifted away to the northward in an ice floe and is so held. Every means possible has been taken to gain tidings of the craft and but a short time can now elapse before definite information will be obtained.

In keeping open winter communication on Lake Michigan the craft are not insured as underwriters will not accept the risks. The Chicora is valued at $160,000 and her cargo of flour at $20,000. She is a comparatively new boat, having been built in 1892 by the Detroit Dry Dock Co. at Detroit. She is a propeller, 198½ feet long by 35 feet beam, and 13.6 feet molded depth. She was built of wood, with steel arches and an iron boiler house, and had a valuation, as given for insurance purposes in the Inland Lloyd's Vessel Register, of $100,000. From the most authentic reports it is learned that her crew consisted of 25 hands all told and one passenger. It is hoped that the vessel will soon be heard from but the relative and friends of the crew express the gravest fears for her safety.

SHIPMASTERS AT WASHINGTON.

The Committee on Merchant Marine and Fisheries gave considerable time on Tuesday to the delegation from Cleveland representing the Lake Carriers' Association and the owners and masters of lake vessels. The lake interests were represented by a large and influential delegation, consisting of Capts. William S. Mack, R. Neville, George B. Mallory, James Stone, John Lowe, John Hall, and Messrs. H. D. Goulder, B. L. Pennington, C. E. Benham, and J. C. Gilchrist, all of Cleveland; Capt. W. E. Rice, of Port Huron; Capt. George A. Shaw, of Marine City; Capt. Frank Welcome, of Buffalo; Capt. Robert Young, of Chicago; Capt. Chas. Brown, of Bay City; Capt. Alex. Clark, of Buffalo, and Capt. Charles L. Wilson, of Detroit. The White bill, providing for a system of passing signals in fog, was taken up and Messrs. Pennington, Goulder and Mack spoke in favor of it, explaining the necessity for its passage and asking for action by the present congress. Owing to the shortness of the time the committee was able to remain in session the hearing could not be finished and it was decided to hold a special meeting again on Wednesday, when other members of the delegation were heard on behalf of the bill.

The shipmasters also held a conference with Supervising Inspector General Dumont and made some progress toward reaching an amicable understanding with him in regard to fog signals, which will probably be closed at the next interview.

At Wednesday's hearing before the committee several minor amendments to the White Bill were agreed to. One of these provides a penalty of $200 for any violation of the law, and another authorizes the supervising inspectors to make rules and regulations in regard to passing signals not inconsistent with the proposed law. The committee will take final action on the bill Friday, and will undoubtedly recommend its passage. The delegates will appear before the senate committee on commerce on Thursday, and as no opposition has developed the White bill is likely to become law before navigation opens in the spring as the Senate and House committees will render a favorable report this week.

REPORTED BY THE LOOKOUT.

The steamer Leland owned by Miles Fox and others, has been libeled at Sandusky at the instance of Edward Gaskin of Buffalo, and others, for $15,000.

Record has been made at the Milwaukee customs office of the transfer of a one-fourth interest in the schooner Levi Grant by Otto Genssenhainer to Albert Williamson, of Sheboygan, for $700.

The steel schooner Marcia, sister-ship to the Malta, building at the yards of the Chicago Ship Building Co. to the order of the Minnesota Steamship Co. of Cleveland will be launched in a day or two.

It is stated that the Western Transit Co. is about to withdraw from the Buffalo-Duluth passenger traffic. It is not known whether the Anchor Line will also retire in favor of the Northern Steamship Co. or not.

Report has it that the American Steel Barge Co. is figuring with Pickands, Mather & Co., of Cleveland, for four steel barges of the ordinary vessel type to tow behind the Minnesota Co.'s steamers. This is right in so far as all builders have been asked to submit to bids.

Contractors are now at work rebuilding both of the ore docks at Ashland, Wis. Work on the Lake Shore dock No. 1 was begun this week. The rebuilt dock will be a foot higher than the new dock at Duluth and the pockets will hold eight tons each.

A contract for a new wooden tug has just been placed at Collingwood, Ont., with Alfred Morrill by James MacDonald, of Meaford. She is to be 66 feet in length and have triple compound engines. Several other orders for new tonnage is expected to be closed at an early date.

The Great Northern Transit Co. of Collingwood have settled upon the name "Majestic" for their new steamer now under construction at Collingwood. No expense is being spared in the building of this handsome steamer which is promised to be the best upon the upper lakes and a credit to the lake marine of Canada.

Representative Haugen introduced a bill on Monday to authorize the Secretary of War to place the harbors of Duluth and Superior under the continuous contract system for the purpose deepening them to the uniform depth of twenty feet, as recommended by the commission appointed through the efforts of Senator Washburn to examine the harbors. Haugen's bill provides a total appropriation of $3,000,000 to complete this project.

A special from Mackinaw reports that at this time last year ice sixteen inches thick was put up, while now the Straits are clear from shore to shore. For a couple of weeks the channel has been filled with field ice and the prospect was that it would freeze solid, but an unusually severe westerly gale carried it all into Lake Huron. The last blizzard may have the effect of coating the Straits over, but it has remained open hitherto.

The schooner George L. Wrenn, which was to encircle the globe and would if she had started out and all had gone well have by this time been proudly floating the stars and stripes in tropical seas, now lies in the harbor at Ludington, Mich., with a foot or so of snow on her decks. Her upper works have been stripped off and the Wrenn will next summer be used in the coast lumber trade. It is said that Dr. Ransome, the projector of the round the world cruise in this small lumber hooker, is in Tennessee, rusticating.

The famous case of the R. & O. N. Co. against the insurance companies has been settled. It will be remembered that the Richelieu & Ontario Navigation Co. claimed $40,000 insurance on the burniug of the steamer Corinthian. This claim was disputed by the insurance companies interested and was carried through all the different courts. In each case judgment was secured by the shipowners and finally about a week ago notice of appeal to the privy council was given by the insurance companies. It is now learned that they have decided to forego this appeal, and to pay the amount claimed, $40,000, to the Richelieu company, together with all costs incurred.

ANNUAL MEETING OF THE DRY DOCK ASSOCIATION.

The annual meeting of the Dry Dock Managers' Asciation was held at Buffalo on Friday last. Those present were: Edward Gaskin, superintendent Union Dry Dock Co., Buffalo; Hamilton Mills, Mill's Dry Dock Co., Buffalo, and secretary of the association Frank Wright, Cleveland Dry Dock Co., Cleveland; George Quayle, Ship Owners' Dry Dock Co., Cleveland; Edwin Peck, of Springwells Dry Dock, Detroit, and John C. Parker, Detroit Dry Dock Co.; Thomas Dunford, Port Huron Dry Dock Co.; Thomas Miller, of Miller Bros., Chicago; W. I. Babcock, Chicago Shipbuilding Co.; Frederick Starkey, Milwaukee Ship Owners' Co.; Burger & Burger, Manitowoc, represented by proxy; James Davidson, Bay City Dry Dock Co.

Officers were elected as follows: President, George Quayle, of Cleveland; vice-president, W. E. Fitzgerald, of Milwaukee; secretary and treasurer, Hamilton Mills, of Buffalo.

Although a committee from the Lake Carriers' Association made strenuous efforts for a reduction in charges, and set forth that a flat rate of 10 cents per ton should be charged instead of 20 cents for the first 500 tons and 10 cents for each additional ton, the dry dock men would not concede to the request, stating, it is alleged, that there was nothing to be made at a reduced rate. It was, however, decided that the dockage charges on cargoes be reduced from 10 cents to 5 cents per 1,000 tons and 2½ cents for over 1,000 tons. Other charges will remain as they have been. The next annual meeting will be held at Port Huron, Jan. 16, 1896.

The members of the Lake Carriers' committee that met with the dry dock managers were Capt. J. W. Moore and J. C. Gilchrist of Cleveland, and Capt. M. M. Drake of Buffalo.

THE BABCOCK & WILCOX BOILER.

The firm of Babcock & Wilcox have scored an important deal in contracting to place their water tube boilers in the new steamer orders for the construction of which has just been placed in the hands of the Chicago Ship Building Co. The adoption of the Babcock & Wilcox boiler in one of the largest freight steamers on the lakes as the new boat will be, being 405 feet over all and of 6,000 tons' capacity on a moderate draft, is a departure which will be closely watched by builders and owners at all lake ports and on which the future of this form of boiler will more or less depend.

Although this type of boiler, which has been illustrated in the columns of THE RECORD, has for years been extensively used on shore, it is only recently that the makers have made any effort looking to its use in large steamers and especially freight steamers. The latest type of the Babcock & Wilcox water tube boiler for marine purposes follows the well-known principle of design of the stationary types except that the sides of the boiler and furnace are formed by water tubes and that a change has been made in the size and arrangements of the tubes, the five lower rows of tubes immediately above the grates are 4 inches in diameter, and those above 2 inches in diameter, the latter arranged in groups of four each, each of which group is accessible through a single opening in the headers.

The headers are sinuous in form so that the front and back of the boiler is practically a solid water wall, and the tubes staggered. One feature of the construction of these headers is that they are now made of open-hearth steel and hydraulic forged from rolled plate; the ends are welded in, and the two tiers of headers connected together and to the drum and the lower circulating pipes by wrought iron tubes secured by expanding in the usual way. The main tubes are also expanded in the headers, there being no screw joints in the boiler. Access to the ends of the tubes is had by means of a plate on the front and back headers, one plate for each 4-inch and one for each nest of four 2-inch tubes. The joint on the outside of the header is a ground one, and the dog carrying the stud, which is placed inside the header, is so made that in the event of the stud breaking there will be only a slight leakage. The plate riveted to the drum to receive the ends of the tubes connecting the back headers with the drum is of open-hearth steel forged to shape in a hydraulic press. Above the boiler there is a feed water heater, so arranged that it may be shut off and the feed introduced directly into the drum.

During the past year Mr. T. T. Milton, chief engineer surveyor to Lloyd's Registry of Shipping, read two papers before the institution of naval architects on water tube boilers, in which he gave some particulars of a Babcock & Wilcox boiler fitted on board the steamer Nero. As showing the development in the recent design it is interesting to note that in the Nero the tubes above the furnace are all 1.5 inches diameter, and that instead of horizontal water walls on the sides the tubes are vertical, 3 inches diameter and about 9 feet long, spaced five inches from center to center, with a sheet of one-fourth inch asbestos board, backed by wrought iron plates, outside of them. The tnbes in the feed water heater are 3 inches diameter and about 7 feet 6 inches long. The working pressure is 200 pounds.

This boiler has 2.272 square feet of heating surface and 44 square feet of grate and is designed for 450 I. H. P. Its weight with water and casings, is about 27 pounds per square foot of heating surface, and in steaming condition, including smoke pipe, boiler fittings, brick baffle plates, etc., 32.2 pounds.

OBITUARY.

WILLIAM N. BURTON.

A pioneer in the annals of lake navigation and its development as well as an underwriter in the earliest stages of marine insurance on the lakes, passed away at Detroit last week, in the person of Mr. William N. Burton, aged 78 years, whose remains were interred at Milwaukee, Wis.

William N. Burton was an old and well-known marine insurance man. He was the brother of J. C. Burton, of the firm J. C. Burton & Son, of Detroit, fire and marine underwriters. He was connected with the Columbian and other marine insurance companies with headquarters at Buffalo, and was actively engaged in marine work for about thirty years. He was one of the first tugmen engaged in the work at Chicago, and when the light-house at South Manitou was built he was the first one put in charge of it. Since his retirement from business several years ago, he has made his home with relatives in Chicago and Milwaukee. About two years ago he went to reside at Detroit, where he lived with his daughter until the time of his death. He was born in 1817 and was therefore 78 years old.

TRANSFERS OF VESSEL PROPERTY.

Among the more recent transfers of vessel property recorded at the Milwaukee customs office are the following:

Tug Ralph M. Cooper—Two Rivers Manufacturing Co. to Henry Troy, of Two Rivers, the whole, $3,500. Schooner O. Shaw—A. D. Thorp, sheriff of Door County, to William Barnett, of Kewaunee County, Wis., the whole, $130. Tug Elsa M.—Fred Milchow, of Oshkosh, to Joseph Duvall, of Kewaunee, the whole, $100; same, Joseph Duvall to George W. Wing and Charles Wattawa of Kewaunee, the whole $170; same, George W. Wing and Charles Wattawa to Charles Malchow, the whole, $200. Tug Welcome—Mathilda Ellison to N. S. Cornell and David Neal, of Sheboygan, two-thirds, $550; same, Rudolph John to U. S. Cornell and David Neal, one-third, $300. Schooner Joses—Evan Johnson to Claus Jorgenson, of Racine, one-half, $950. Schooner Evaline—E. A. Northway and Martha Galliens to William Hood, of Racine, the whole, 2,800.

Grand Haven furnished the following record of recent vessel transfers:

Tug E. G. Crosby—E. G. Crosby to J. A. Hitchcock and B. B. Rice, of Muskegon, one-fourth, $4,000. Tug O. M. Field—J. A. Hitchcock to E. J. Humphrey and William J. Watson, of Muskegon, one-fourth, $1,000. Steamer Carrie E. Ryerson—J. A. Hitchcock to E. J. Humphrey and William J. Watson, of Muskegon, one-fourth, $1,000. Steamer Nyack—J. A. Hitchcock to E. J. Humphrey and William J. Watson, of Muskegon, one-fourth, $10,000. Tug E. G. Crosby—J. A. Hitchcock and B. B. Rice to E. J. Humphrey and William J. Watson, of Muskegon, one-fourth, $4,000. Schooner Rambler—Harry Raffenand, of Holland, to Fred H. Fitch, of Montague, the whole, $290. Schooner F. H. Fitch—Fred H. Fitch, of Montague, to Claus J. Blink, of Holland, the whole, $325. Steamer Bon Ami—Reuben T. Rogers to Calvin Whitney, of Saugatuck, five-sixteenths, $1,000. Schooner Arctic—United States marshal to Robert Follock, of Charlevoix, the whole, $250,57.

THE SUN'S RAYS.

It is not unfrequently asked why, with the sun at this season 3,000,000 miles nearer the earth than it is in June, we should have much colder weather than in that month. It is because the rays of the great heat-radiating orb glance obliquely across our part of the earth at this time of the year, but later the earth swings into a position to get the rays squarely, and then, at even the much greater distance, we feel their power in a greater degree. Down below the equator, where it is summer at the time that the sun is nearest the earth, the people who live there get some weather that we would think unbearable. For the same reason the winters in the parts of the earth where the sun is furthest away at the time that his rays are glancing across the earth instead of shining directly down are as much colder than ours as the summers are warmer. After all it is pretty nice to live in a temperate climate where great extremes of heat and cold are not usual.

It is true that January is usually much colder than December. The lengthening of the days is not the reason for it though, but because, although the earth is getting a few minutes more of sunlight each day, it is too little to make any impression and it still loses more heat through the long night than it can get back during the short day. In the same way the summer is hotter after June than before, though each day is growing a very little shorter than the preceding one. But the earth has been slowly warming up from late February and the nights are still too short to lose as much heat through the night as is received through the still long day.

NOTES.

H. G. TROUT & CO., King Iron Works Foundry of Buffalo, N. Y., are now making the Trout Wheel when wanted of a mixture of cast iron and steel which gives double the strength. They also make other castings of same metal.

MAJOR GEORGE METCALF, for nearly twenty years past the treasurer of the American Ship Windlass Co., Providence, R. I., died on the 14th inst. in his 70th year. Mr. Metcalf spent some of his early life afloat, went through the late civil war and will long be remembered as a model citizen, an ardent patriot, a gallant soldier, a generous friend, a devoted husband and father, and a man of distinguished ability and fidelity.

APROPOS of the initial use of water tube boilers in lake freight steamers, we note the following prominent and well known types: Belleville fitted in the lake-built twin screw steel passenger steamers North West and North Land, running between Buffalo and Duluth; Ward coil boiler, the Mosher; Roberts, Almy, Towne, Seabury, Warrington, McBride & Fisher and the Babcock & Wilcox first to be fitted in a lake freight steamer. There are fully as many types built abroad.

THE Dominion of Canada has expended more than $60,000,000 in the construction of its canal system. The larger part of this expenditure has been made with the view of providing a fourteen foot waterway from the Great Lakes by the St. Lawrence to Montreal. Improvements now being made, which will probably be completed in two years, will give a depth of fourteen feet, with locks 270 feet between gates, and forty-five feet in width. Upon its completion, this route to the seaboard will be found the cheapest water route to the sea. Enormous quantities of grain and other products centering on the lakes for export will then be transshipped at Montreal, which, under existing conditions, are sent abroad by other routes.

THE sale of their shipyard property at Sheboygan, Wis., by Rieboldt, Wolter & Co. to the coal-handling firm of C. Reiss & Co., announced recently as about consummated, is in reality a transfer to the Chicago & North-Western Railway Co. and the premises will be utilized by Reiss & Co. in connection with the railroad property now occupied by them under a nominal lease running for a term of years, the aim of the railway company being to secure business for its rolling stock out of Sheboygan. The price to be paid for the shipyard property is $13,000. Capt. Conrad Starke, the Milwaukee member of the firm of Rieboldt, Wolter & Co., is authority for the statement that the shipyard will not be removed to Sturgeon Bay. The intention, he says, is to locate upon a suitable site farther up the river at Sheboygan provided a fairly liberal business spirit is evinced by the owner of the property in question. Per contra the Sheboygan Journal claims that Rieboldt, Wolter & Co., are considering an offer from the business men of Sturgeon Bay for the removal of their plant to that point.

WILLIAM L. BROWN, President.
WALTER F. COBB, Vice President and Treasurer.
W. I. BABCOCK, Manager.
O. R. SINCLAIR, Secretary and Asst. Treas.

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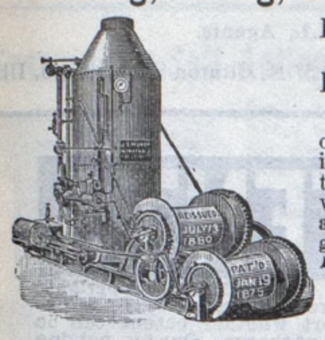

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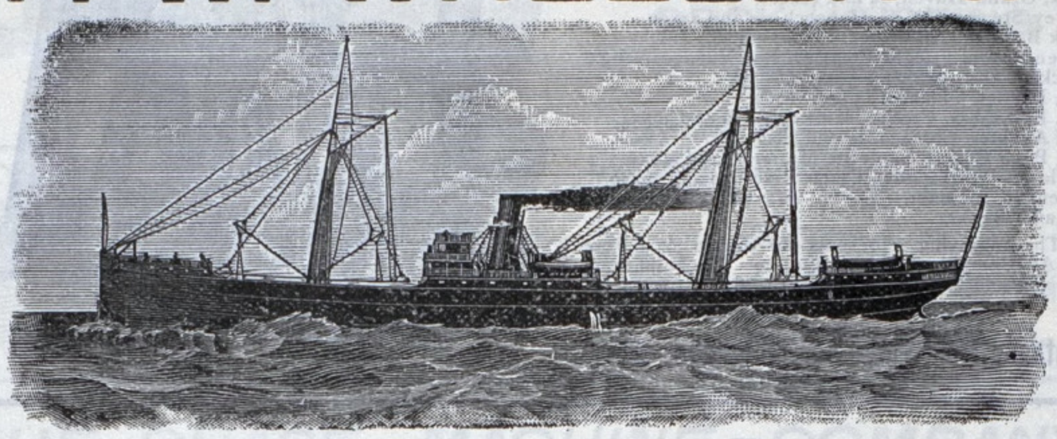

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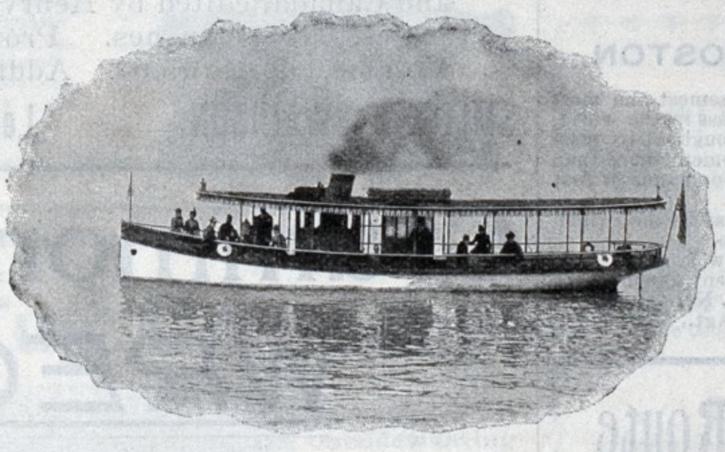

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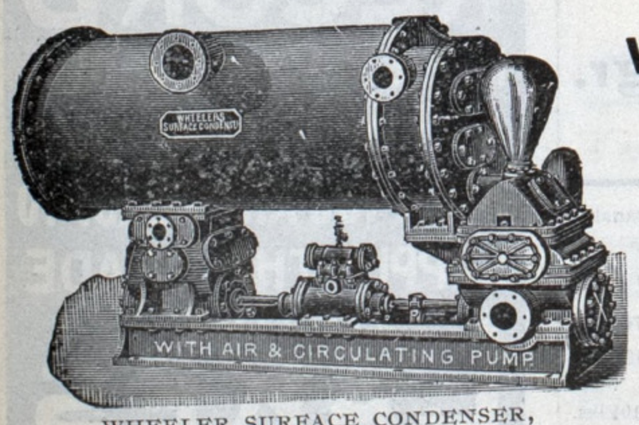

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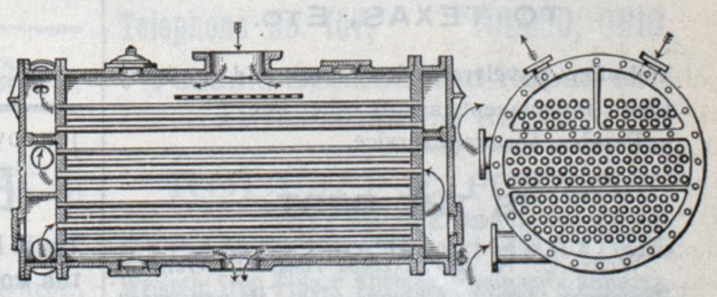

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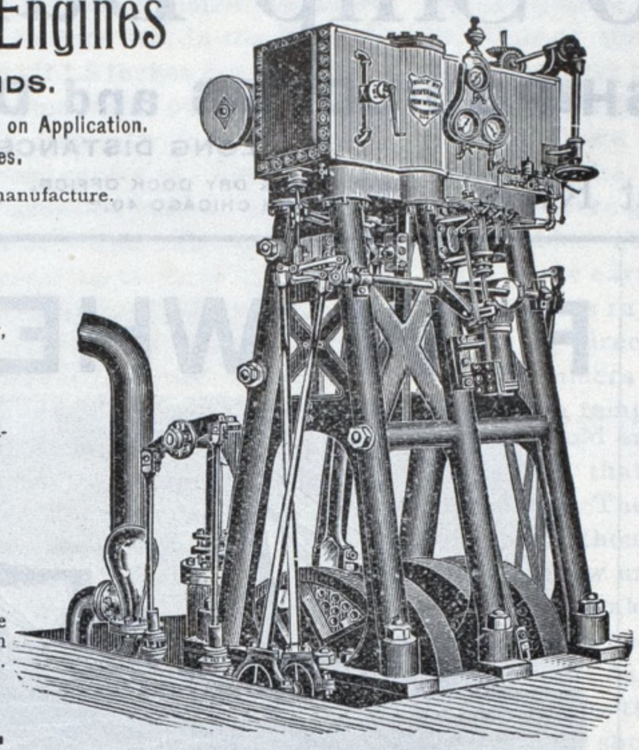

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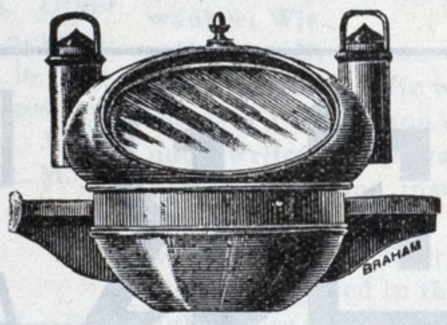

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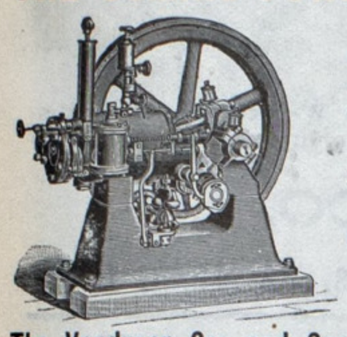

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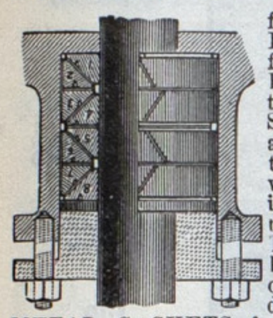

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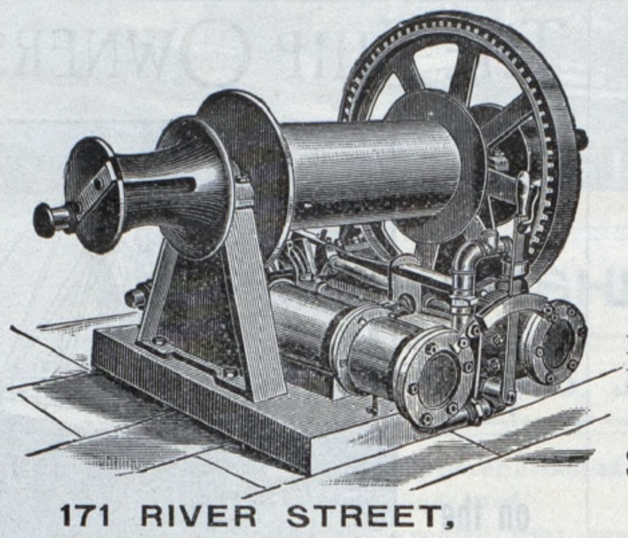

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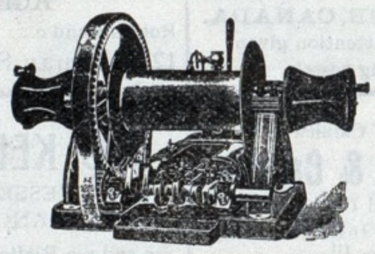

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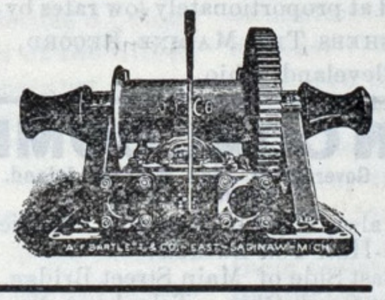

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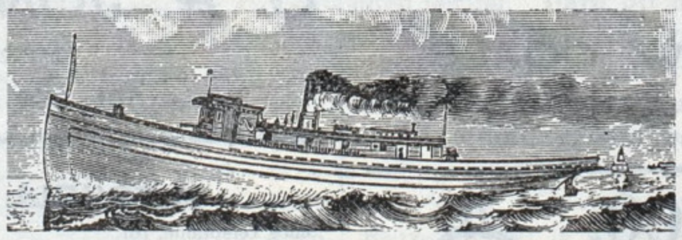

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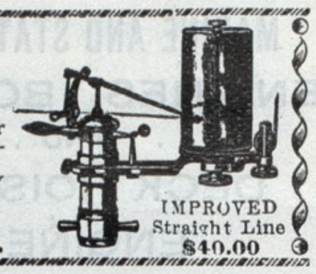

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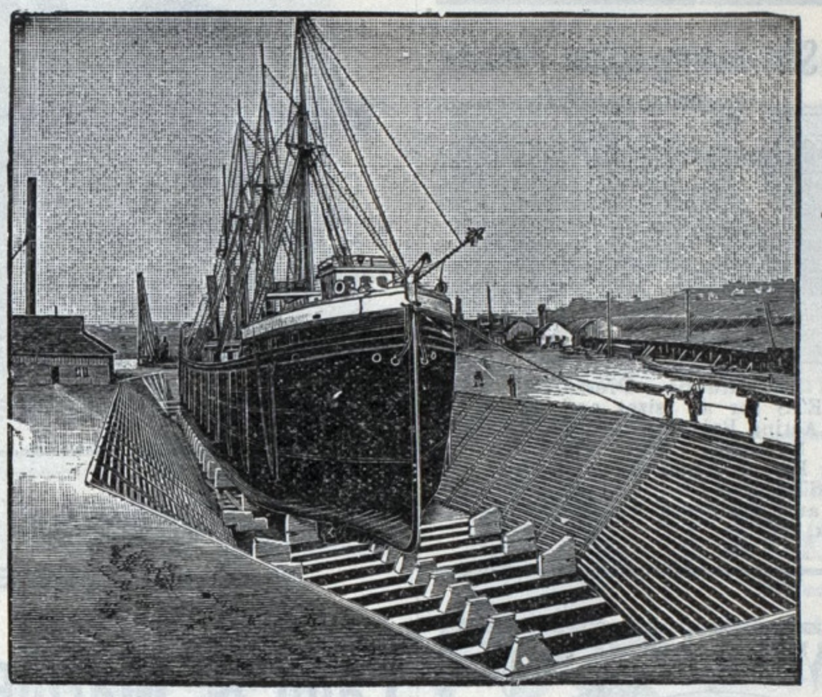

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